

## NOTES

### TWO NEW SPECIES OF *BONAFOUSIA* (APOCYNACEAE) FROM PANAMA AND COLOMBIA-ECUADOR

***Bonafousia panamensis*** Markgraf, Boiteau & Allorge. TYPE: *Gentry 6847* (Z, holotype; MO, isotype).—FIG. 1.

*Arbuscula* ad 7 m alta. Ramiculi crassiusculi, angulosi. Folia decussata, petiolus crassus, 1–1.5 cm longus, basi intus collo intropetiolari 3 mm alto instructus; lamina membranacea, maxima, usque ad 50 cm longa et 18 cm lata, elliptica, apice breviter acuminata, basi longe angustata, glabra, in sicco lutescens, subtus minute papillosa et glandulis sparsis punctata; nervi laterales arcuati, ad 3 cm inter se distantes, 18–20 in utroque latere. *Inflorescentia* axillaris, glabra, cymosa, 6 cm alta et lata; pedunculus crassus, 0.5–1 cm longus; bracteae ovatae, obtusae, 2–3 mm longae, 1 mm latae; pedicelli 4–6 mm longi. Lobi calycis oblongo-ovati, obtusi, membranacei, inaequales, 1–1.4 cm longi, 0.8 mm lati, intus multiglandulosi. *Corolla* dilute lutea, glabra, hypocraterimorpha; tubus albus, 12–20 mm longus, 4 mm latus, infra faucem dextrorsum tortus; alabastrum loborum luteum, globosum, tubo aequilatum; lobi explanati 5 mm alti, dolabriformes, lateraliter ad 8–9 mm elongati, obtusi. Antherae infra faucem insertae, sagittatae, 4–6.5 mm longae, 1 mm latae, caudis basalibus leviter incurvatis. Caput stigmatis antheris arcte appressum, supra globosum et 5-gibbum, infra umbraculiforme. Ovarium apocarpum, biloculare, glabrum, conicum, 1.5 mm altum et latum, disco 1 mm alto, anuliformi insidens. *Mericarpium* oblique globosum, calice persistente. Semina ovoidea, 1 cm longa, arillo rimoso induta. Embryo rectus, cotyledones ovato-oblongi, 2 mm longi, radícula, 2.5 mm longa.

Specimens examined: PANAMA: Province Bocas del Toro: Region of Almirante, Buena Vista Camp on Chiriqui trail, 1250 ft. 1–3. 1928. *Cooper 610*, NY; Province Coclé: Vicinity of La Mesa, N of El Valle, 1000 m, *Allen 2804*; hills of El Valle, *Allen 2953*, GH; N slope and summit of Cerro Pilon, 900–1173 m, *Croat 14319*, *Croat 22919*, GH, NY; Slopes of Cerro Pilon, *Duke 12173*, *13161*, *14651*; La Mesa, El Valle, Cerro Pilon, *Dwyer 3574a*, *8299*, *8362*, *11900*, GH; Cerro Pilon, 2700 m, *Dwyer 8688*; Cerro Gaital Caracoral, *Dwyer & Correa 8862*, *8912*; Summit of Cerro Pilon, *Dwyer et al. 4502b*; Cerro Pilon, base, *Gentry & Dwyer 3645*; El Valle, Cerro Pilon, *Kirkbride 1047*, *1080*; Cerro Pilon, *Lallathin 27-4*, NY; Cerro Pilon, *Liesner 784*, GH; Province Colon: Sta Rita Ridge, 4–5 miles Transisthmian hwy, 500–800 m, *Gentry 6100*, Z; Sta Rita Ridge, Boyd Roosevelt hwy, *Mori & Crosby 6420*; Province Darien: Vicinity Cerro Tacarcuna, *Gentry & Mori 14054*; Province Panama: Road to Carti, 15 km of El Llano, *Busey 372*; El Indio, Rio Cascada, region Cerro Jefe, 750 m, *Correa & Dressler 1777*; Cerro Camapan, 800 m, *Croat 22809*; 1000 m, *Croat 22809*, NY; El Llano-Carti Road, *Croat 25168*; El Llano-Carti Road, *Dressler 4281*; Cerro Jefe, 3100 ft, *Dwyer & Gentry 9519*; Cerro Camapan, *Gentry 1855*, *4951*, *5784*, Z; El Llano-Carti, *Kennedy 2686*; Altos de Rio Pacora, 2500 ft., *Lewis, MacBride et al. 2297*; Cerro Camapan, 850 m, *Liesner 632*; La Eneida, 1000 m, *Luteyn & Foster 1125*, NY; Cerro Camapan, El Llano-Carti and Altos de Pacora, *Mori & Kallunki 3571*, *4553*, *6047*; El Llano-

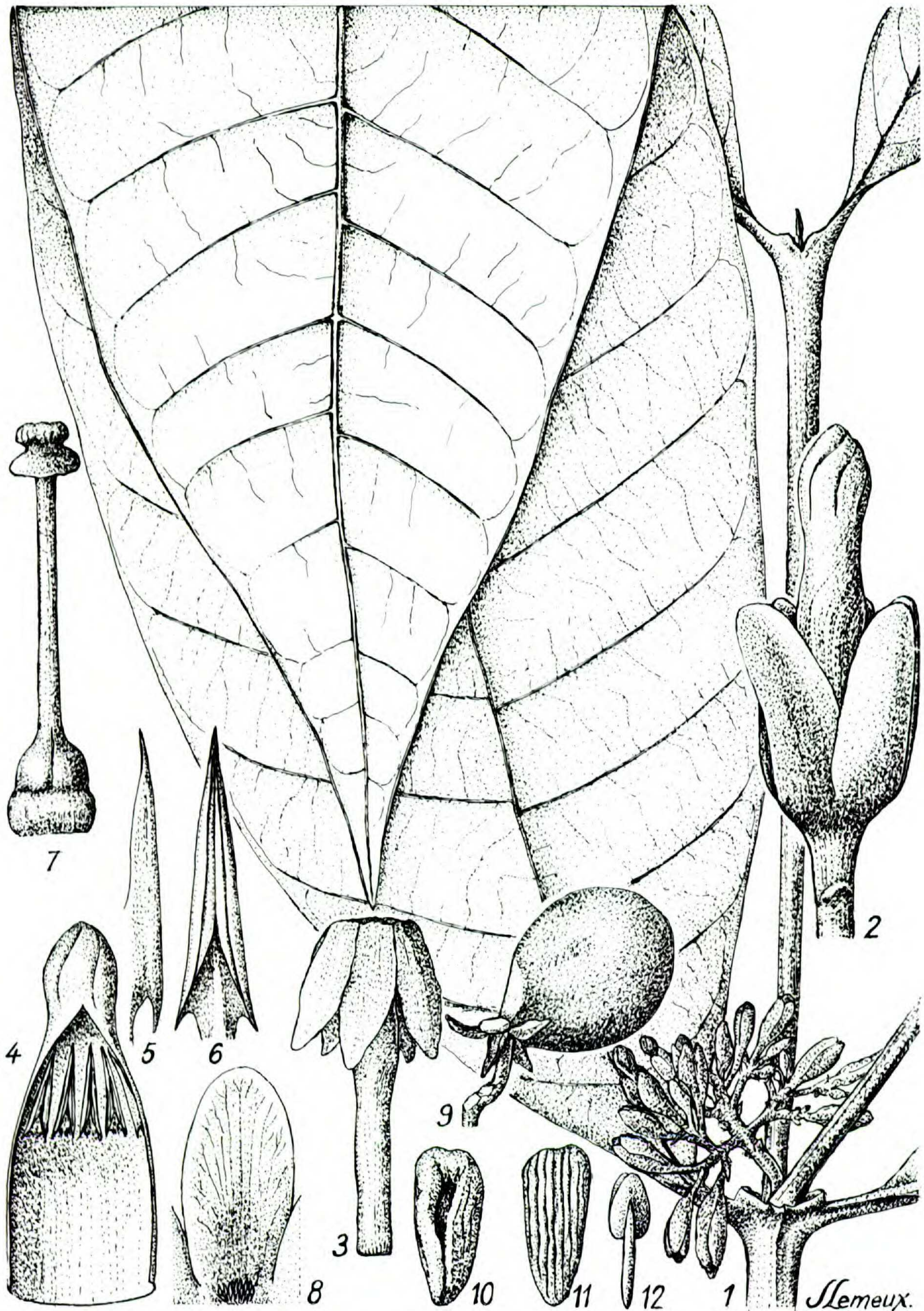


FIGURE 1. *Bonafousia panamensis* Markgraf, Boifeau, & Allorge: 1.—flowering twig  $\times \frac{2}{3}$ ; 2.—flower bud  $\times \frac{2}{3}$ ; Gentry 6847. 3.—corolla  $\times 2$ ; Croat 22919. 4.—corolla of flower bud cut longitudinally below and laid flat  $\times 2$ ; 5.—stamen, front view  $\times 6$ ; 6.—stamen, side view  $\times 6$ ; 7.—gynoecium with its clavuncle  $\times 4$ ; 8.—sepal with glands, inner view  $\times 2$ ; Gentry 6847. 9.—fruit, a mericarp removed  $\times \frac{2}{3}$ ; Gentry 6100. 10.—seed, inner side  $\times 2$ ; 11.—seed, outer side  $\times 2$ ; 12.—embryo  $\times 2$ ; Gentry & Dwyer 3645.

Carti, *Nee & Warmbrodt 10377*; Province San Blas: San Blas-Darien Road, Rio Membrilla, *Duke 10876*; Vicinity of Puerto Obaldia, *Mori 6869*; Plain of Sperdi, near Puerto Obaldia, *Pittier 4354*; Province Veraguas: Between Alto Piedra School and Rio Colovebora, *Croat & Folsom 34103*; NW of Santa Fe, *Mori & Kallunki 5348*; 7 km W of Santa Fe, *Nee 11159*.

The first quoted material for this species was mentioned by Woodson & Shery (1942) under the name of *Bonafousia sananho* (R & P) Mgf. Nowicke (1970) used this same name in the Flora of Panama. This species is, however, easily distinguished from *Bonafousia sananho* because it has a much larger calyx with many glands at the base, with lobes not equal to half the tube, etc. The major part of the material examined was from MO; the other herbaria are specified.

***Bonafousia columbiensis*** Allorge. TYPE: Colombia: Espriella, Tumaco, 20 June 1959, *Castañeda 2799* (MO, holotype).—FIG. 2.

*Frutex* vel arbuscula 3–10 m alta; cortice cinero-fusco, rimoso; latice albo. Ramiculi tenui, cylindranei, absque canalibus, dichotomi. Folia opposita, lanceolata, 11–20 cm longa, 3–5 cm lata, longe acuminata, acumine 1–2 cm longo, membranaceae, sicca luteola, petiolo 0.5–1 cm longo, nervis utraque pagina manifestis, 0.5–1 cm distantibus. *Inflorescentiae* pauciflorae, saepe recurvatae, pedunculo subnullo, pedicellis 0.3–0.5 cm longis, bracteis triangularibus 1 mm longis. Flos albus fauce lutea vel crocea. Calyx dentibus obtusis, glaber viridis, margine ciliatus, basi interne 3–5 glandibus instructus; *Corollae* tubo 1–5 cm longo, glabro extra interneque basi, indumento infrastaminalis zonis infrastaminalibus filamentis paribus disposito. Lobi corollini initio contorti, dein reflexi, medium tubi haud superantes. Alabastrum sphaerocephalum obtusum. Discus distinctus ex ovario erigens, ad dimidium calycis tubi attingens. Carpella longe in stylum descrescentia; clavuncula basali coronula continua et appendicibus brevissimis a latere invisibilibus munita. *Fructus* luteus, mericarpiis duobus recurvatis, acuminatis, granulosis, compositus, 4 × 2 × 2.5 cm metientibus. Pulpa alba, dulcis, edulis; semina fusca longitrorsum sulcata. Embryo radícula recta, longiore quam cotyledonibus (2.5 mm vice 2 mm longa) cotyledonibus cordatis. A *B. chocoensis* Gentry differet foliis petiolatis, inflorescentia pauciflora, fructuque minus globosa, non laeve. A *B. sananho* (R & P) Mgf. et *B. tetrastachya* (HBK) Mgf. quibus saepe confusa est, differet i.a. lobis corollinis medium tubi haud superantibus.

Specimens examined: COLOMBIA: La Guayacana, Tumaco, *Castañeda 2920*. ECUADOR: Province Pichincha, 20 km W of Sto Domingo de los Colorados, 1000 m, *Cazalet & Pennington 5166*, K, NY; Province Los Rios, Rio Palenque, 150–220 m, *Dodson 5457*, *Dodson 6611*; *Dodson & McMahon 5025*, NY; Province Oriente, Napo Pastaza and Bobonaza, 1000 m, *Gill 14*, NY; Province Pichincha, Rio Toachi near Sto Domingo, 700 m, *Jativa 527*, NY; 37 km S of Sto Domingo, *Pennington 86 SD*, K, NY; foot of Western Cordillera, *Rimbach 45*, GH; mentioned as a sp. nov. of Peru, but at that time Peru included Ecuador, *Ruiz & Pavon s.n.*; Mt. Chimborazo, 2500 m, *Spruce s.n.*, K.

The illustrations published by Romero Castañeda (1961) must refer to this species rather than to *Bonafousia tetrastachya* as he indicated, since the lobes

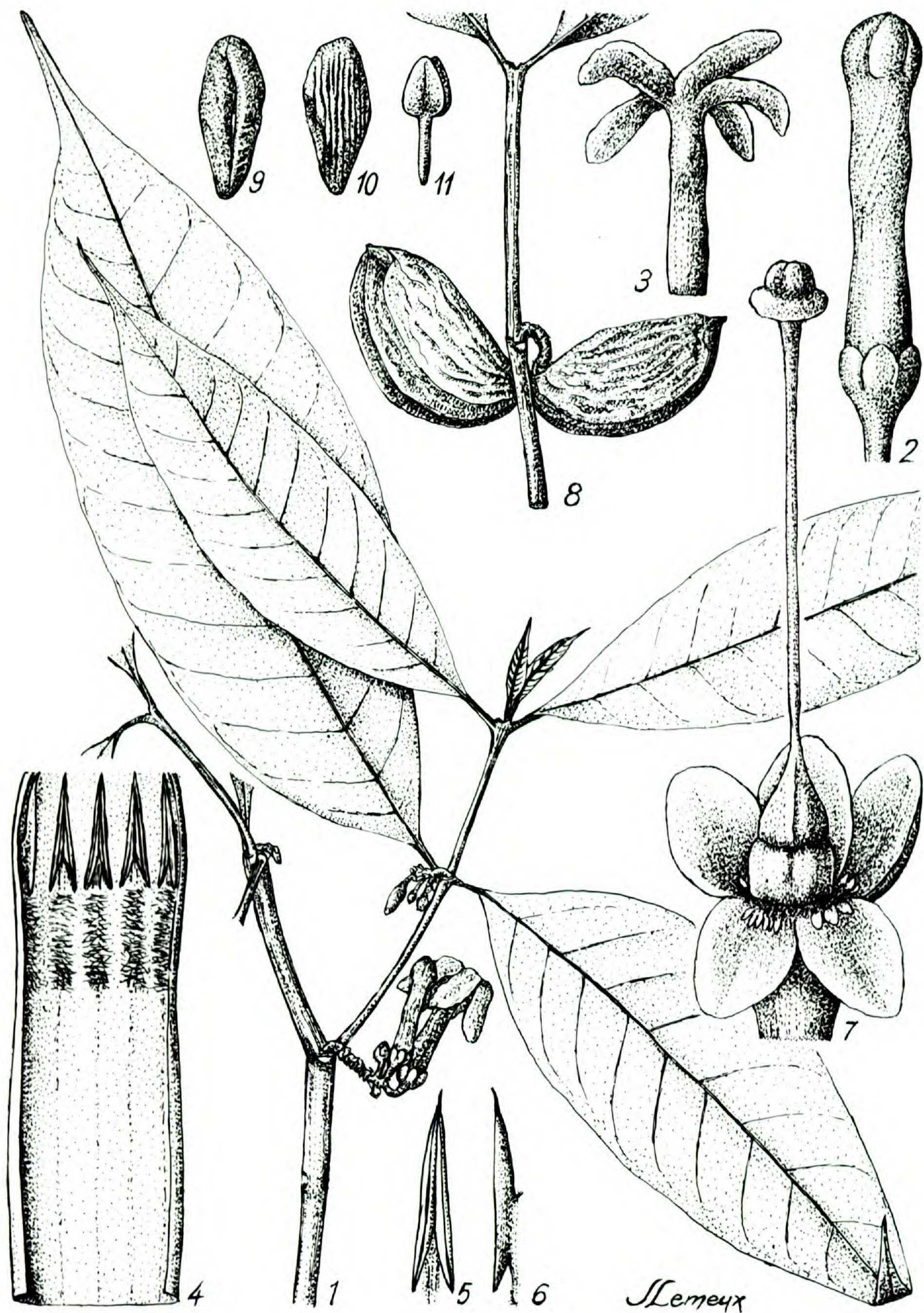


FIGURE 2. *Bonafousia columbiensis* Allorge: 1.—flowering twigs  $\times \frac{2}{3}$ ; Ruiz et Pavon, G, Herb. Boissier; 2.—flower bud  $\times 2$ ; Dodson 5457. 3.—corolla  $\times 2$ ; Cazalet et al. 5166. 4.—corolla of flower bud cut longitudinally below and laid flat  $\times 4$ ; 5.—stamen, front view  $\times 6$ ; 6.—stamen, side view  $\times 6$ ; 7.—gynoecium with its clavuncle  $\times 6$ ; Dodson 5457. 8.—fruit  $\times \frac{2}{3}$ ; Dodson 6611. 9.—seed, ventral side  $\times 2$ ; 10.—seed, dorsal side  $\times 2$ ; 11.—embryo  $\times 2$ ; Dodson et MacMahon 5025.

are shorter than half of the tube of the corolla. According to the map of vegetation types of Ecuador published by G. Harling (1979), the distribution of this species is found in the "lowland and lower montane rain forest" zones at an altitude of 100–2500 m.

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## STUDIES IN THE CAPPARIDACEAE XV: *CAPPARIS PANAMENSIS*, N. SP.<sup>1</sup>

***Capparis panamensis* Iltis, sp. nov.** TYPE: Panama, Prov. of Panamá, El Llano-Cartí Road, 12 km from Inter-American highway, wet forest 350 m alt. 15 Feb. 1975 (fl). Mori, Kallunki & A. Gentry 4632 (WIS, holotype; MO, US, isotypes).—FIG. 1–2.

Arbores parvae, stellato-pubescentes; similis *Capparis pittieri*, sed foliis oblongo-ellipticis coriaceis perennibusque, subtus flavovirentibus, inflorescentibus laxioribus grandioribusque, et floribus grandioribus; sylvae tropicae Panamae endemica.

Small trees 5–6 m tall. Branches with  $\pm$  protruding leaf scar bases, the youngest, leaf-bearing ones rusty-brown stellate-pubescent, 2–3 mm in diameter, becoming in the second year dark red-brown and verrucose and 3–6 mm or more in diameter.

Leaves alternate, spaced 1–3 cm apart, 4–7 on each branchlet, oblong-elliptic (rarely slightly oblanceolate-elliptic), broadly acute to abruptly acuminate and/or rounded at apex, broadly cuneate to rounded at base, (5–)8–17 cm long, (2–)4–6(–8) cm broad, stellate-pubescent on both sides when young, becoming glabrous and somewhat varnished, evergreen and stiffly coriaceous, with quite entire and slightly revolute margins, in herbarium material dark green above, markedly yellow-green beneath; main lateral nerves 5–8, the midrib and lateral nerve network prominent on both sides, but the smaller veins buried in the thick blade tissue. Petioles 8–15(–24) mm long.

<sup>1</sup> I thank Alwyn Gentry for his photograph, and Duane Kolterman for the drawing of the distribution map.